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REPORTS ON THE FLORA OF MASSACHUSETTS,—II.

In making this report it seems desirable to explain certain geographic terms which frequently appear. By the Southeast is meant all that territory south of the southern boundary of Norfolk County. To make it a straight line the townships of Hingham and Hull are excluded from the definition of the Southeast, while the remainder of Plymouth County and all of Bristol, Barnstable, Dukes, and Nantucket Counties are included. Thus the line follows the old boundary between the Massachusetts Bay and the Plymouth Colonies, and by a strange coincidence marks the strongest line of cleavage in both the flora and the past history of the state. The Boston District refers to the same territory covered in the reports of the Committee on that area.¹ Roughly it includes that portion of the East which remains after that part designated the Southeast has been deducted.

The members of this Committee are much indebted to Prof. Fernald and Mr. Weatherby for advice on difficult technical questions involved in the present report.

Since the previous report the Committee has lost a valued member in the death of Judge Joseph Richmond Churchill.

POLYPODIACEAE (FERN FAMILY), addenda to Report I.

ASPLENIUM L. SPLEENWORT.

A. montanum Willd. MOUNTAIN SPLEENWORT. Great Barrington, S. Waldo Bailey; cf. Am. Fern. Jour. xiv. 92 (1924).

¹ RHODORA, ix. 81 (1907).

SCHIZAEACEAE (CURLY GRASS FAMILY)

LYGODIUM Sw. CLIMBING FERN.

L. palmatum (Bernh.) Sw. Moist thickets; found locally across the state, except in the Southeast where it is known from two stations in Bristol County. Stations now much reduced.

OSMUNDACEAE (FLOWERING FERN FAMILY)

OSMUNDA [Tourn.] L.

O. regalis L., var. **spectabilis** (Willd.) Gray. ROYAL FERN. Swamps and wet woods; occasional in Dukes and Nantucket Counties, frequent elsewhere.

Forma **anomala** (Farwell) S. K. Harris.¹ Range similar to that of typical form.

O. Claytoniana L. INTERRUPTED FERN. Low grounds; common, except in the Southeast, where it is frequent on the mainland, rare on Nantucket (Bicknell, Bull. Torrey Botanical Club, xlv. 365 (1918)) and not reported from Dukes County.

O. cinnamomea L. CINNAMON FERN. Swampy ground; common throughout.

Forma **incisa** (Huntington) Gilbert, N. A. Pterid. 13, 28 (1901). (*O. cinnamomea* var. *incisa* J. W. Huntington). Occasional in the Northeast; Stockbridge and Sandisfield in Berkshire County.

Forma **bipinnatifida** Clute, Fern Bull. xiv. 45 (1906). Medford, G. E. Davenport, Brockton, A. A. Eaton, Sandisfield, (R. Hoffmann, Proc. Bost. Soc. Nat. Hist. xxxvi. 199 (1922)).

Forma **latipinnula** Blake, RHODORA, xv. 155 (1913). Walpole, J. R. Churchill, Canton, S. F. Blake.

Forma **frondosa** (T. & G.) Britton, Cat. Pl. N. J. 312 (1890). (*O. cinnamomea* var. *frondosa* T. & G.). Frequent in the Northeast; Scituate in Plymouth County and Sheffield in Berkshire County.

OPHIOGLOSSACEAE (ADDER'S TONGUE FAMILY)

OPHIOGLOSSUM [Tourn.] L. ADDER'S TONGUE.

O. vulgatum L. (Including forma *pseudopodium* Blake). Meadows and pastures; frequent in the western part of the state, becoming occasional eastward.

¹ *OSMUNDA REGALIS* L., var. *SPECTABILIS* (Willd.) Gray, forma **anomala** (Farwell) S. K. Harris, comb. nov. *O. regalis* L., var. *spectabilis* (Willd.) Gray, subvar. *anomala* Farwell, Am. Midland Nat. xii. 307 (1931).

BOTRYCHIUM Sw. MOONWORT.

(The first four species appear sporadically).

B. simplex E. Hitchcock. Moist woods and fields; local throughout the state except the Southeast.

B. tenebrosum A. A. Eaton. Moist woods and fields; occasional in the Northeast, rare in the Southeast and West. Exact status doubtful, but not quite satisfactorily referable to any of the other species, according to Mr. Weatherby.

B. angustisegmentum (Pease & Moore) Fernald. (*B. lanceolatum* var. *angustisegmentum* Pease & Moore; cf. RHODORA, xvii. 87 (1915)). In rich deciduous woods; frequent in Berkshire County becoming occasional eastward and known only from Sandwich in the Southeast.

B. matricariaefolium A. Br. (*B. ramosum* of Manual). Rich usually deciduous woods; frequent in Berkshire County, becoming occasional eastward and known only from Provincetown, Halifax, and Sandwich in the Southeast.

B. dissectum Spreng. (*B. obliquum* Muhl. var. *dissectum* (Spreng.) Clute; cf. Clute, Fern Bull. x. 76 (1902)). Pastures and open woods; frequent throughout the state.

Forma **obliquum** (Muhl.) Fernald. (*B. obliquum* Muhl.; cf. Fernald, RHODORA, xxiii. 151 (1921)). Occurring over the same range as the typical form and often associated with it.

Forma **oneidense** (Gilbert) Clute. (*B. obliquum* var. *oneidense* (Gilbert) Waters, *B. ternatum* var. *oneidense* Gilbert; cf. Clute, Fern Bull. x. 76 (1902)). Occasional in Essex, Norfolk and Worcester Counties.

Forma **elongatum** (Gilbert & Haberer) Weatherby. (*B. obliquum* var. *elongatum* Gilbert & Haberer; cf. Weatherby, RHODORA, xxiii. 209 (1922)). Rare.

B. multifidum (Gmel.) Rupr., var. **intermedium** (D. C. Eaton) Farwell. (*B. ternatum* var. *intermedium* of Manual; cf. Farwell, Rep. Mich. Acad. Sci. xviii. 87 (1916)). Pastures and open woods; occasional throughout the state except in the Southeast where known only from Eastham and West Tisbury.

B. virginianum (L.) Sw. (Including var. *intermedium* Butters). Rich woods; frequent in the western part of the state, becoming occasional eastward; known only from Sandwich in Barnstable County and not reported from Dukes County.

MARSILEACEAE

MARSILEA L.

M. QUADRIFOLIA L. Aquatic; introduced in several rivers and lakes in the northeastern part of the state, also in Egremont and Falmouth.

SALVINIACEAE

AZOLLA Lam.

A. CAROLINIANA Willd. Aquatic; naturalized for some years in Springfield, now probably extinct (cf. RHODORA, xxiii. 212 (1922)). Also reported recently from Falmouth (*J. M. Foga Jr.*).

EQUISETACEAE (HORSETAIL FAMILY)

EQUISETUM [Tourn.] L. HORSETAIL.

E. arvense L. COMMON HORSETAIL. Sandy banks and roadsides; common and rather variable.

E. pratense Ehrh. Alluvial soil in calcareous regions; valley of the Connecticut River, and New Marlboro, local.

E. sylvaticum L., var. **pauciramosum** Milde. (*E. sylvaticum* L. of Manual; cf. RHODORA, xx. 131 (1918). Including forma *multiramosum* Fernald). Wet fields and woods; frequent except in the Southeast where it is known only from a few stations in Bristol County.

E. palustre L. (*E. littorale* of Manual; cf. Schaffner, Am. Fern Jour. xxii. 126 (1933)). Shores of Merrimac River at Amesbury and Newburyport.

E. limosum L. (*E. fluviatile* of Manual; cf. RHODORA, xxiii. 43 (1921)). Shallow water and mud-banks; frequent except in the Southeast where known only from rare stations in Plymouth and Bristol Counties, and from Nantucket (Bicknell, Bull. Torr. Bot. Club, xxxv. 54 (1908)).

Forma **minus** A. Br. (Cf. RHODORA, xxiii. 45 (1921)). Amesbury, A. A. Eaton.

Forma **verticillatum** Doell. (Cf. RHODORA, xxiii. 45 (1921)). Same general range as the species, but in the Southeast known only from Lakeville and Dighton.

E. hyemale L., var. **affine** (Engelm.) A. A. Eaton. Loose sandy

streambanks; frequent except in the Southeast where known only from Swansea.

E. variegatum Schleich. Sandy or gravelly streambanks; Salisbury in Essex County, Conway and Charlemont in Franklin, and Williamstown, North Adams, Sheffield and Stockbridge in Berkshire.

E. scirpoides Michx. Moist evergreen woods and low fields; rare from the Connecticut Valley westward, unknown eastward except from Amesbury.

LYCOPODIACEAE (CLUB MOSS FAMILY)

LYCOPODIUM [Rupp.] L. CLUB MOSS.

L. Selago L. Subalpine rock crevices; Mt. Greylock in Williamstown and Mt. Holyoke in South Hadley.

L. lucidulum Michx. Cold damp woods; common in Berkshire County and the Connecticut Valley drainage, frequent eastward, rare in the Southeast and not reported from Dukes or Nantucket Counties.

L. inundatum L. Sandy shores and in sphagnum; frequent in the Southeast, occasional elsewhere.

Var. **Bigelovii** Tuckerm. Sandy shores; common in the Southeast, frequent elsewhere in the East, not known west of Middlesex and Norfolk Counties.

Var. **robustum** R. J. Eaton, RHODORA, xxxiii. 201 (1931). Concord, Barnstable, Sheffield.

Var. **alopecuroides** (L.) Tuckerm. (*L. alopecuroides* L.; cf. Fernald, RHODORA, xxiii. 100 (1921)). Sandy swamps; Nantucket, *Bicknell* (Bull. Torr. Bot. Club, xxxv. 55 (1908)), *Dame*, *Churchill* (Cf. R. J. Eaton, RHODORA, xxxiii. 203 (1931)).

L. annotinum L. Open woods; occasional except in the Southeast whence not reported.

Var. **acrifolium** Fernald, RHODORA, xvii. 124 (1915). Same range as the species but somewhat more frequent.

L. clavatum L. Dry woods; frequent except in the Southeast where known only from New Bedford, Taunton, Norton and Sandwich.

Var. **megastachyon** Fernald & Bissell, RHODORA, xii. 53 (1910). (Var. *monostachyon* of modern authors, not Grev. & Hook.). Dry open ground, especially upland pastures; occasional except in the Southeast whence not reported.

L. obscurum L. Rich woods; occasional in the Southeast, common elsewhere.

Var. **dendroideum** (Michx.) D. C. Eaton. Same range as the species but not reported from Dukes County.

L. complanatum L., var. **flabelliforme** Fernald. GROUND PINE. Dry woods; originally common.

L. tristachyum Pursh. Dry sandy soil; locally abundant.

SELAGINELLACEAE

SELAGINELLA Beauv.

S. rupestris (L.) Spring. Dry exposed rocks; locally frequent except in the Southeast where known only from Easton, Seekonk, and New Bedford.

S. apoda (L.) Fernald. (*S. apus* Spring.; cf. RHODORA, xvii. 68 (1915)). Low shady places; frequent except in the Southeast where known only from occasional stations in Bristol and Plymouth Counties.

ISOETACEAE (QUILLWORT FAMILY)

ISOETES L. QUILLWORT.

I. Braunii Dur. (*I. echinospora* var. *Braunii* and var. *muricata* of Manual; cf. Pfeiffer, Ann. Mo. Bot. Gard. ix. 156 (1922)). Muddy or sandy river and pond margins; several stations in Bristol County in the Southeast, frequent about Boston and northward, only scattered stations in Worcester County and westward but this seeming rarity is due presumably to lack of collecting.

Forma **robusta** (Engelm.) Pfeiffer. (*I. Gravesii* A. A. Eaton; cf. Pfeiffer, ibid. 173). Cited from Massachusetts under the name of *I. Gravesii*; cf. Manual, 61.; Enfield, Goodale, Potsabay & St. John.

I. Eatoni Dodge. Borders of ponds and streams; Amesbury, in Parker River, Byfield, and North Easton (Cf. Pfeiffer, ibid. 178).

I. riparia Engelm. (Including *I. saccharata* Engelm., var. *Amesii* A. A. Eaton). Muddy banks or gravelly bottom, amphibious; occasional around the Boston District, in the Southeast known only from Taunton and Easton, and in the West only from Amherst (Cf. Pfeiffer, ibid. 182), Holyoke, and Enfield.

Var. **canadensis** Engelm. (Including *I. Dodgei* and its var. *Robbinsii*). Peabody, Taunton, Uxbridge. (Cf. Pfeiffer, ibid. 185).

I. macrospora Dur. (Including var. *heterospora* and *I. Tuckermani* var. *Harveyi*). Gravelly or rocky shores, submersed; Cambridge, Uxbridge. (Cf. Pfeiffer, *ibid.* 194).

I. Tuckermani A. Br. Muddy shores; frequent in Essex and Middlesex Counties, occasional in Bristol, Barnstable and Dukes, and the Connecticut Valley.

I. foveolata A. A. Eaton, var. **plenospora** A. A. Eaton. Gravelly shores; North Easton.

I. Engelmanni A. Br. (Including var. *gracilis* Engelm.). Muddy shores, amphibious; occasional in the Boston District, in the Southeast known only from Dartmouth, New Bedford and Gosnold.

TAXACEAE (YEW FAMILY)

TAXUS [Tourn.] L. YEW.

T. canadensis Marsh. AMERICAN YEW, GROUND HEMLOCK. Rich evergreen or mixed woods; rare in the eastern part of the state, becoming frequent in northwestern Middlesex County and in Worcester County and westward, unknown in the Southeast except from Norwell.

PINACEAE (PINE FAMILY)

PINUS [Tourn.] L. PINE.

P. Strobus L. WHITE PINE. Light sandy or rather basic soil, or sometimes swamps; common except on the outer part of Cape Cod and on Nantucket where only a single tree is recorded (Bicknell, *Bull. Torr. Bot. Club*, xliv. 371 (1917)).

P. rigida Mill. PITCH PINE. Sandy or barren soil; common in the Southeast, frequent elsewhere in the East, becoming only occasional westward.

P. BANKSIANA Lamb. GRAY PINE, NORTHERN SCRUB PINE. Barren sandy or rocky soil; planted as a soil binder along the state roads, introduced on Nantucket (Bicknell, *RHODORA*, xviii. 241 (1916)). Doubtful if really established anywhere within the state.

P. SYLVESTRIS L. SCOTCH PINE, SCOTCH FIR. Planted throughout the state and becoming established locally on light sandy soil, especially in the Southeast.

P. resinosa Ait. RED PINE. Light sandy loam and dry rocky ridges; rare, not known from the Southeast except an introduced stand in Falmouth.

LARIX [Tourn.] Adans. LARCH.

L. laricina (Du Roi) K. Koch. AMERICAN LARCH, BLACK LARCH, TAMARACK, HACKMATACK. Cold swamps and wet hillsides at higher altitudes westward; common from Berkshire to northern Worcester County, occasional eastward, and not known in the Southeast except from introduction.

L. DECIDUA Mill. Widely cultivated and occasionally becoming established.

PICEA Link. SPRUCE.

P. GLAUCA (Moench.) Voss. (*P. canadensis* of Manual; cf. RHODORA, xvii. 62 (1915)). WHITE SPRUCE, CAT SPRUCE. Introduced and locally established.

P. rubens Sarg. (*P. rubra* of Manual; cf. RHODORA, xxxiv. 211 (1932)). RED SPRUCE. Rocky upland woods; occasional except in the Southeast where known only from Pembroke.

Forma **virgata** (Rehder) Fernald & Weatherby, RHODORA, xxxiv. 211 (1932). Williamstown, *Walker*.

P. mariana (Mill.) BSP. BLACK SPRUCE, BOG SPRUCE. Cold bogs; occasional, but not known from the Southeast.

P. ABIES (L.) Karst. NORWAY SPRUCE. Widely cultivated and becoming established locally.

ABIES [Tourn.] Hill. FIR.

A. balsamea (L.) Mill. BALSAM FIR, BALM-OF-GILEAD FIR. Swamps and moist slopes; occasional in Berkshire County and the extreme northern part of the state eastward; introduced and locally established elsewhere.

TSUGA (Endl.) Carr. HEMLOCK.

T. canadensis (L.) Carr. Moist hilly or rocky woods; frequent in the Boston District, becoming common westward; in the Southeast occasional in Bristol County, rare in Plymouth and unknown elsewhere.

CHAMAECYPARIS Spach. WHITE CEDAR, CYPRESS.

C. thyoides (L.) BSP. Swamps; occasional about Boston and from southern Worcester County west to the Connecticut Valley, frequent in the Southeast on the mainland but not known from Nantucket, and from Gosnold only, in Dukes County.

THUJA L.

T. OCCIDENTALIS L. **ARBOR VITAE, WHITE CEDAR.** Widely cultivated, and in a few rare instances producing seedlings.

JUNIPERUS [Tourn.] L. **JUNIPER.**

J. communis L. **COMMON JUNIPER.** Dry soil; occasional from Worcester County westward.

Var. **depressa** Pursh. Poor rocky soil, pastures; frequent from Essex to northern Plymouth and Bristol Counties and westward, known only from Gosnold in Dukes County, and not reported from Barnstable or Nantucket Counties.

J. virginiana L. **RED CEDAR, SAVIN.** Dry soil; common.

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NOTES ON THE FLORA OF COLUMBIA, MISSOURI¹

FRANCIS DROUET

DURING the period following the appearance of Rickett's *Flora* (Univ. Mo. Stud. 6 (1). 1931), more than a thousand specimens of vascular plants of the vicinity of Columbia have been added to the Herbarium of the University of Missouri; and many of the older specimens have been critically examined by H. W. Rickett, B. F. Bush, and myself. The annotated list of species given below summarizes the results of this work to the present date. New species have been added; a few changes have been made in the nomenclature of the *Flora*; some "lost" species have been restored; and new localities have been reported for rare species. The common species of *Crataegus*, *Rubus*, *Vernonia*, *Aster*, *Helianthus*, and other large genera may

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